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1. INTRODUCTION

- 1.1 This Technical Note has been prepared by Paul Basham Associates on behalf of Sennitt Planning to support drainage strategy comments for a change of use application from B8 (Storage yard) and commercial use to that of car sales yard at Winchester Road, Fair Oak.
- 1.2 The proposed development is located west of Winchester Road, Fair Oak and is indicated by the red line boundary demonstrated within Figure 1. The nearest postcode is SO50 7HD.



Figure 1: Site Location Plan

- 1.3 The site assessed within this Technical Note is approximately 0.4ha in size.
- 1.4 The existing site comprises of five buildings, including a showroom with an outdoor patio display area, a construction materials storage yard, a waste and recycling area and car parking.

2. FLOOD RISK

- 2.1 Flood mapping provided by the Environment Agency as shown in Figure 2, indicates that all of the site lies within Flood Zone 1.

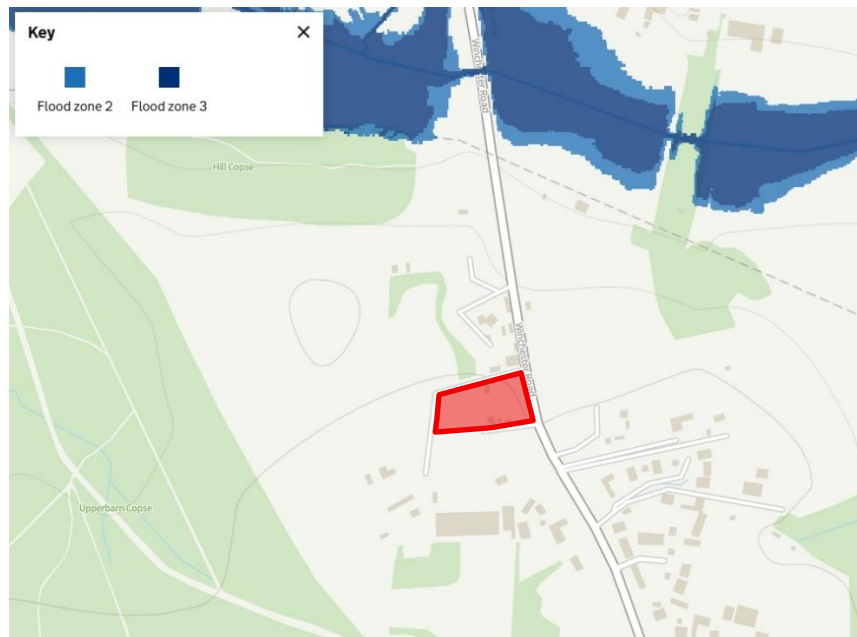


Figure 2: EA Flood Map for Planning

- 2.2 The EA long term flood risk mapping for flooding due to rivers and seas indicates that all of the site is not at risk of flooding from rivers and seas. See Figure 3 below.

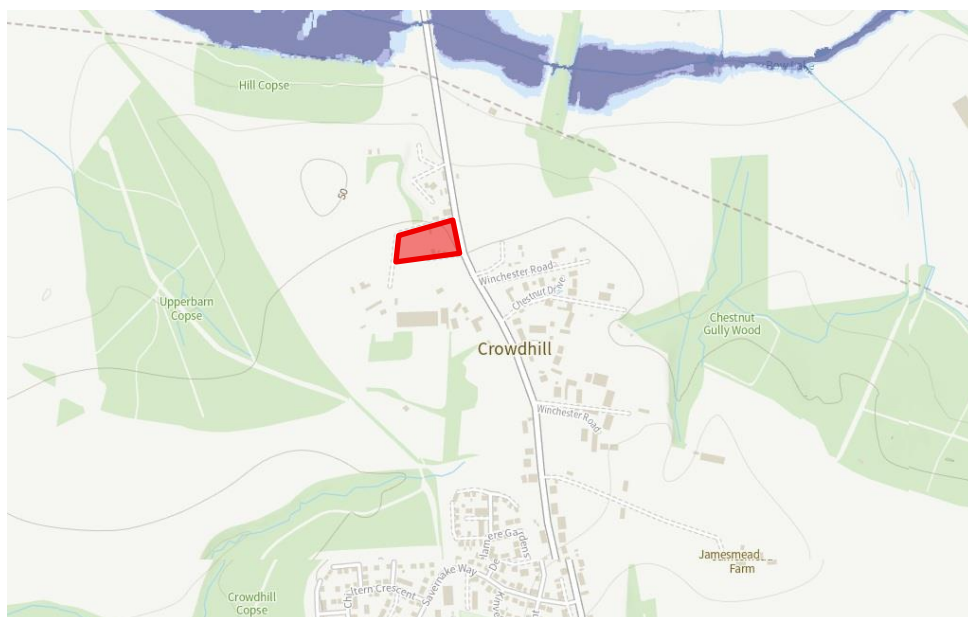


Figure 3: Extent of Flooding from Rivers and Seas

- 2.3 Surface water or 'pluvial' flooding results from rainfall running over ground before eventually entering a watercourse or sewer. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen, developed (for example in an urban setting), or otherwise has low permeability.
- 2.4 The surface water flood risk map is shown in Figure 4 below and indicates the site is very low chance of flooding from surface water.

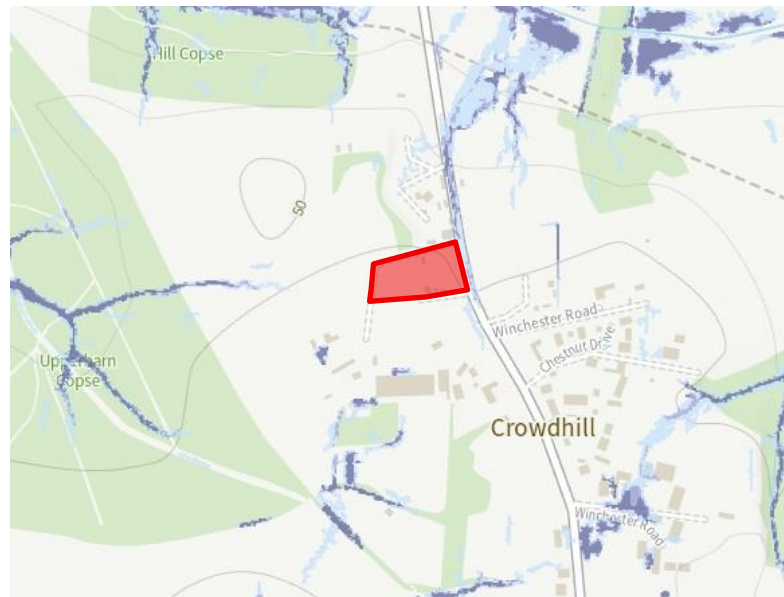


Figure 4: Long term flood risk from surface water.

3. EXISTING SITE DRAINAGE STRATEGY

- 3.1 The existing site comprises five buildings, including a showroom with an outdoor patio display area, a construction materials storage yard, and a waste and recycling area. The storage yard is served by a tarmac access road that allows vehicles to drop off and collect materials. The rest of the storage yard is a stone/gravel surface on top of made ground.
- 3.2 The site benefits from existing drainage infrastructure comprising a channel drain that runs across part of the site to collect surface water runoff. See Figure 5 for photo of channel drain. This drainage feature discharges into a manhole located in the north-eastern corner of the site, which

subsequently connects to the public sewer in Winchester Road. The channel drain serves only a limited portion of the existing site area.



Figure 5: Photo of existing drainage

- 3.3 Surface water runoff from the remainder of the site is managed at source, with water assumed to be infiltrating into the ground beneath the existing stone and gravel surfaced areas.

4. PROPOSED DRAINAGE STRATEGY

- 4.1 The proposed development involves the demolition of some of the existing buildings (approximately 80m²) and the removal of some existing trees, approximately 60m² (1% of the site area), with the remaining buildings to be repurposed as a car sales office. The yard area will be used for the storage and display of vehicles for sale.
- 4.2 The existing tarmac access road will be removed and replaced with gravel surfacing to be consistent with the remainder of the site.
- 4.3 Surface water runoff from the buildings that are to remain will continue to discharge in accordance with the existing drainage arrangements. Runoff from the yard area will be managed at source, allowing infiltration into the ground, consistent with the current site conditions.
- 4.4 The demolition of some of the existing buildings will not result in an increase in impermeable area; the approximate area of 80m² for the existing buildings that is going to be replaced as gravel driveway increases the area draining at source by 2%. However, it will reduce the extent of surface water discharging off site, with a greater proportion of runoff being managed at source through infiltration into the ground.
- 4.5 The change in use from a showroom and construction material storage yard to a car sales showroom and display of vehicles for sale shows no increase to the hazard index, meaning there is no increase in the pollutants being washed off the site. See Figure 6 and Figure 7 below for Landuse Pollution Hazard Index figures for the existing and proposed sites.

Runoff Area Land Use Description	Pollution Hazard	Pollution Hazard Indices		
		Total Suspended Solids	Metals	Hydrocarbons
Standard commercial yard or delivery area	Medium	0.7	0.6	0.7
Landuse Pollution Hazard Index	Medium	0.7	0.6	0.7

Figure 6: Existing Landuse Pollution Hazard Index

Runoff Area Land Use Description	Pollution Hazard	Pollution Hazard Indices		
		Total Suspended Solids	Metals	Hydrocarbons
Non-residential car parking with frequent change (eg hospitals, retail)	Medium	0.7	0.6	0.7
Landuse Pollution Hazard Index	Medium	0.7	0.6	0.7

Figure 7: Proposed Landuse Pollution Hazard Index

5. SUMMARY AND CONCLUSION

- 5.1 The existing site comprises five buildings with a combination of tarmac, stone, and gravel surfaced external areas.
- 5.2 Current surface water drainage is partly managed by a channel drain, which serves a limited area of the site and discharges to the public sewer in Winchester Road.
- 5.3 The majority of surface water runoff across the site is managed at source through infiltration into the ground beneath gravel and stone surfacing.
- 5.4 The proposed development includes the demolition of some existing buildings, with the remaining buildings reused as a car sales office and the yard used for vehicle storage and display.
- 5.5 The existing tarmac access road will be removed and replaced with gravel surfacing to match the remainder of the site.
- 5.6 Surface water runoff from retained buildings will continue to discharge via the existing arrangements, while runoff from the yard will continue to be managed through ground infiltration.
- 5.7 Although the impermeable area will remain unchanged, the proposed works will reduce the volume of surface water discharging off site by increasing the proportion of runoff managed at source.
- 5.8 The proposed drainage strategy maintains and enhances the existing approach to surface water management by capturing the runoff at source and discharging into the ground and reducing off-site discharge. The removal of the tarmac surfacing, combined with the reuse of gravel surfaces, ensures that surface water is effectively managed at source without increasing impermeable area or placing additional demand on the public sewer network. Overall, the proposed development represents a betterment of the existing drainage provision that is consistent with the current site conditions.